

Distance Learning in the Military: Trends, Benefits and Challenges

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The U.S. Department of Defense (DoD) represents a massive training and education enterprise. Training and educational services are provided to 1.4 million service members on active duty, 870,000 ready reservists, 750,000 civilian personnel, and K-12 schooling is provided to about 110,000 military dependents. Every year the Department spends approximately \$17 billion to train and educate the force, with thousands of courses addressing hundreds of specialized occupational areas. These are taught at training centers, military academies, staff colleges, armories, reserve centers, and training ranges around the world as well as through distance learning programs. Not surprisingly, the Department has substantial research and development investments in cutting-edge learning technologies.

What has been the role of distance learning in this enterprise? The full answer is lengthy. Rather than providing a protracted discussion, this paper limits its focus to four representative programs that reflect current trends: (1) the Advanced Distributed Learning (ADL) Initiative reflects a global partnership to promote interoperability of online learning content and delivery; (2) the Warrior Satellite Network reflects a mature technology with intergovernmental links for delivery of short-term training events and seminars; (3) the eArmyU initiative is an innovative application of e-learning to meet the civilian educational needs of personnel serving worldwide; and (4) the Regional International Outreach program address the transformation of security cooperation activities through the integration of education, learning and technology dedicated to international cooperative development of e-learning content.

Advanced Distributed Learning (www.adlnet.org)

The ADL Initiative was launched in November 1997. It is the most visible program in a long campaign to incorporate in DoD practice the benefits of technology-based instruction and performance aiding. ADL is intended to accelerate large-scale development of dynamic and cost-effective learning software and to stimulate a vigorous market for these products. Under Executive Orders issued by both the last and the current administrations, ADL is to develop and demonstrate capabilities that can be adopted by all federal agencies. It is establishing a common technical framework for computer and Web-based learning that will foster the creation of reusable learning content as "instructional objects."

The goal is to ensure access to high quality education and training, tailored to individual needs, developed and delivered cost-effectively, available anytime and anywhere. This goal is viewed as something that can be made feasible, only through the use of technology. ADL is preparing for a world where communications networks and personal delivery devices are pervasive and inexpensive, as well as transparent to the users in terms of ease of use, bandwidth and portability. Much current ADL effort is an attempt to understand how best to utilize the next generation technology infrastructure.

ADL is based on the view of future education, training, and performance aiding keying on three main components: (1) a global information infrastructure, which is populated by reusable instructional objects; (2) a server, which locates and then assembles instructional objects into education, training, and/or performance aiding materials tailored to user needs; and (3) devices that serve as personal learning associates on which the materials are presented. The server will assemble material on demand and in real time. This material will be tailored to the needs, capabilities, intentions, and learning state of each individual or group of individuals. Today, much of the work of the server is expected to be accomplished by 'middleware' in the form of learning management systems.

Sharable Content Object Reference Model (SCORM)

To date much of the ADL effort has been devoted to the specification of reusable, sharable instructional objects. The SCORM has emerged through the collective efforts of many groups, such as the IMS Global Learning Consortium, the IEEE, the ADL Co-Laboratory network, and many vendors, organizations, and individuals around the world. SCORM 2004 was released in January 2004, and it will become the stable model for the development and delivery of all future online learning content in the DoD. SCORM has received considerable interest in other sectors and by developers. For example, there are more than twenty patent applications related to SCORM products and tools. ADL is currently developing prototype content repositories where registered metadata describing instructional objects may be accumulated and cataloged for broad discovery, distribution, and use. Such repositories will provide the basis for a new instructional object economy that rewards content creators for developing high quality learning objects and assembling them into accessible, sharable, and adaptive learning experiences.

The ADL Initiative is advancing wide-scale applications of other learning technologies, such as intelligent tutors, large and small-scale simulations, and multiplayer online games. ADL has strong partnerships with hundreds of organizations adopting SCORM: federal agencies (e.g. Centers for Disease Control), professional consortia (e.g. MedBiquitous, representing more than 30 medical organizations (American College of Surgeons, etc.)), universities (centralized through the Academic ADL Co-Lab, University of Wisconsin), military alliances (NATO has an active ADL program), nations (ADL Partnership labs in UK, Canada, Korea), and e-learning vendors (ADL is vendor neutral so none is listed). Finally, ADL has received steady support from Congress (GAO, 2003).

Satellite Warrior Network

With the increasing reach and capabilities of the Internet, some have suggested that mature distance learning technologies, such as satellite teleconferencing, may have reached their nadir. In fact, although fewer satellite distance-learning networks are being built by either industry or governmental and military organizations, satellite networks for delivering instruction are leveraging the Internet for both increased target audience penetration as well as for administrative support services.

For more than a decade, the use of satellite-based delivery of short-term training events has occurred on a regular basis in the National Guard. Short-term training events are those that occur within a single day, and cover a wide-range of specialized topics of interest to members of the Guard. As a complement to Internet delivery of instruction, satellite-based training programs maintain certain advantages through a

wide footprint broadcast covering thousands of sites. The Internet has clearly transformed the advertising, scheduling, enrollment, and evaluation of satellite-delivered, short term training events. Prior to 1998, there was a dependence on the telephone, fax, mail, and paper and pencil forms – so the Internet is a value-added resource (Kronholm, Wisher, Curnow & Poker, 1999).

The Government Education and Training Networks is composed of 17 military and federal agencies who operate independently while in mutual support of one another on the same satellite platform. The consortium, which includes the Satellite Warrior Network, frequently carries satellite programming from other government satellite networks and content providers such as the Centers For Disease Control. This past year, 136 shared-use programs were delivered. In addition to satellites as the primary delivery technologies, the agencies use the Internet extensively in an administrative support role.

Case Example

On May 26th, 2004, The National Terrorism Preparedness Institute on behalf of the Department of Homeland Security broadcast a satellite program related to the weapons of mass destruction topic “*Coordinating Local, State and Federal Resources.*” This live, interactive satellite program reached over 770 sites across all 50 states with an estimated live audience of 5,395 and a videotape delay audience of 14,903. However, they also used the Internet in a supporting role for the following activities: (1) to promote and publicize the program; (2) for on-line registration for both individuals and site coordinators; (3) to locate a satellite downlink viewing location; (4) to distribute supporting hand-outs and reference materials; (5) to offer program evaluation and feedback and a post program discussion forum; (6) to provide administrative instructions for satellite coordinates and interactivity; and (7) as a secondary asynchronous delivery platform for a webcast rendition.

The Internet was also used to register and track participants seeking continuing education units, but more importantly, it was used to webcast its programs on a live basis (including a closed captioning option) and then deposit a digital rendition in an archival library. This capability allows others to view past programs, saving a great deal of expense by not having to distribute videotapes of prior broadcasts. Now, this mature, but still valuable technology is being blended and combined with the Internet, not only to provide administrative support, but also in leveraging emerging technologies such as web streaming and archival libraries, to expand its reach to target audiences even further.

eArmyU (www.eArmyU.com)

In January 2001, the United States Army launched eArmyU, an online learning initiative that brought together a consortium of more than 20 colleges and universities and multiple vendors. It is arguably the largest, most visible, integrated online learning program in the world (Lombardo, Fairbanks, and Johnson, 2002). The Army created eArmyU to ensure that eligible enlisted soldiers have full access and support to fulfill their educational goals. By providing access to a variety of online degree programs and related educational services via a single web portal, eArmyU eliminates many of the barriers to education that soldiers have traditionally faced throughout their military careers.

Administered by the Army Continuing Education System, the key objectives of eArmyU are to increase retention, improve quality of life, and enhance readiness by providing learning opportunities that develop critical thinking and decision-making skills. The premise is to provide participants with all the resources needed to succeed in online education.

At the heart of the eArmyU program is the world’s largest online-education portal, www.eArmyU.com. Here Soldiers can access and complete courses anytime, anywhere, allowing them to continue their studies even as their responsibilities, schedules, and duty locations change. More than a website, it is a

virtual doorway that serves as a single point of entry to a complete set of interactive learning resources. Through the portal, Soldiers are able to research degree offerings; apply for admission; register for classes; communicate with faculty and classmates; submit assignments; schedule and take examinations; receive academic, administrative, and technical assistance; and evaluate their progress, all from a single, comprehensive site. The portal brings together multiple software applications and integrates them with existing Army systems to provide a seamless experience for the Soldier.

eArmyU currently offers 146 postsecondary certificate, associate, bachelor's and master's degree programs from 29 regionally-accredited college and university partners. The portal provides soldiers with a single, common application, regardless of which institution they "attend." Through eArmyU, soldiers gain access to a customized degree map, online tracking of degree programs, guaranteed transferability of credit among member institutions, and other features that make the portal a one-stop shop for all activities soldiers-as-students need to manage their postsecondary education. Each soldier is provided with a Technology Package that includes a laptop, Internet Service Provider account, eArmyU "Boot Camp" tutorial, email account, and 24/7 Helpdesk access. Required textbooks, fees, and other course materials are also provided along with 100 percent tuition assistance that includes comprehensive academic advising, mentoring, tutoring, an online writing lab, and digital library resources. Soldiers enrolled in eArmyU now also have the option of using their personal computers to access eArmyU.com.

In conjunction with the portal, eArmyU has developed a robust, proactive, end-to-end student-support initiative called Operation Virtual Counselor Transforms Online Resources for You (ViCTORY). Dedicated Program Mentors reach out to soldiers and leverage a comprehensive web of direct support services and intervention practices that help soldiers achieve key program milestones.

The program is currently offered at 16 installations and a no-laptop-only option is being piloted in Korea. As of May 2004, 46,657 soldiers were enrolled and 435 soldiers have earned degrees. More than 10,212 soldiers have permanently changed duty stations from their original enrollment installations but continue participation from locations worldwide, to include 50 countries, 4 U.S. Territories, and 50 states. The program has made education viable for soldiers while they serve on active duty. Of those soldiers who signed participation agreements, 21.6 percent have reenlisted or extended to take advantage of eArmyU. In summary, eArmyU is a streamlined and effective learning opportunity that, due to its unique portal technology and cost structure, advances the Army into the rapidly developing e-learning market.

Regional International Outreach (RIO)

Each year, international security objectives are expressed in Defense planning and security cooperation guidance. The National Defense University, the premier center for joint professional military education under the direction of the Chairman of the Joint Chiefs of Staff, in coordination with the Defense Security Cooperation Agency, the DoD focal point and clearinghouse for the development and implementation of security assistance plans, recently established the RIO program. The program is a management improvement initiative that facilitates information technology and education and training support for achieving the security objectives.

Implemented worldwide by designated regional U.S. agencies and in collaboration with foreign nations and international organizations, the RIO program uses a cooperative development approach to multinational information sharing that leverages existing DOD programs, such as ADL, into an effective and mutually supporting effort. The RIO program expands existing programs, such as the U.S Joint Forces Command's Regional Security Cooperation Network, and NDU's outreach programs to support areas identified for security cooperation. The RIO program leverages joint professional military education and training initiatives and information technology to enhance co-development of U.S. and alliance

international educational content in support of international partners, theater security cooperation programs, individual Ambassador Plans, and regional civilian-military outreach.

The RIO Joint Program Management Office is working with the five DoD Regional Centers (such as the Asia Pacific Center for Strategic Studies in Hawaii) and other government organizations to develop proposals for international cooperative development projects that emphasize the application of technology for education and training. The curricula projects may cover topics such as counter terrorism, peacekeeping, border control, and disaster and consequence management. Outreach to alumni of the five regional centers is also an area of interest.

References

GAO (2003) Military transformation: Progress and challenges for DoD's advanced distributed learning programs. Washington, DC: General Accounting Office, GAO-03-393, February 28, 2003.

Kronholm, E., Wisher, R., Curnow, C. & Poker, F. (1999) The transformation of a distance learning enterprise to the World Wide Web: from advertising to evaluation. *Published in the Proceedings of the Northern Arizona University WEB.99 Conference, Flagstaff, AZ.*

Lombardo, B., Fairbanks, A., & Johnson, S. (2002) eArmyU: Early lessons from a grand experiment in online learning. EDUCAUSE Center for Applied Research, Research Bulletin, Volume 2002, Issue 20, October 15, 2002.

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